TELTONIKA
EDGE camera (MVC100)

User's Manual 1.00

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ATTENTION

Before using the device we strongly recommend read this user manual.

Do not rip the device. Do not touch the device if the device block is broken or its connecting wires are without isolation.

All wireless devices for data transferring may be susceptible to interference, which could affect performance.

The device is not water-resistant. Keep it dry.

The device requires high 230V AC voltage.

IMPORTANT NOTES!

It is mandatory to read the notes and manual carefully before starting to use the device.

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1 SAFETY INFORMATION

In this document you will be introduced how to use camera safely. We suggest you to adhere to following recommendations to avoid any damage to person or property.

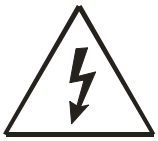
You have to be familiar with the safety requirements before starting to use the device! Camera is used for transmission of video and single images via GSM network using GPRS and EDGE technologies. To avoid burning and voltage caused traumas, of the personnel working with device, please follow these safety requirements.

Installation and technical support of the camera device can be performed only by a qualified personnel or a person who has enough knowledge about this device and safety requirements.

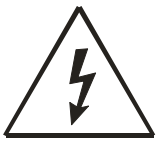
Camera device requires 12V⎓250 mA constant power supply source that satisfies all safety requirements listed in LST EN 60950-1 standard.

The PC and power supply source, to which the device is connected, should satisfy LST EN 60950-1 standard. The device can be used on first (Personal Computer) or second (Notebook) computer safety class.

The light or attachable sensors must satisfy all safety requirements listed in LST EN 60950-1 standard.



Disconnect device from power supply before mounting to avoid voltage effect!



Do not mount or serve device during a thunderbolt.

To avoid mechanical damages of the device it is recommended to transport the device packed in damage-proof pack. While using the device, it should be placed so, that its indication LED would be visible as they inform in which working mode the device is and if it has any working problems.

Protection against over currents, short circuits and earth faults should be provided as a part of the building installation. Two pole protective device is required to protect from short-circuit and earth false. The power of connected device should satisfy power of release device. To disconnect the device plug off AC/DC power adapter from the wall outlet or power strip. The interstice between contacts should be no less than 3mm.

Signal level of the device depends on the environment in which it is working. If the device starts working insufficiently only qualified personnel may repair this product. We recommend to forward it to repair centre or to manufacturers. No exchangeable parts inside of the device.

2 GETTING STARTED

2.1 Introduction

Teltonika MVC100 EDGE Camera - compact mobile surveillance and monitoring system for transmission of high resolution video and single images via GPRS/EDGE network, so even in places with no Internet connection available - ideal for remote surveillance and monitoring of temporary or distant sites or mobile assets. The images can be acquired automatically with programmable period and/or upon external triggers such as motion sensors or door contacts. The video and single images can be viewed on a PC or a handheld device, and can also be transmitted to FTP-server and/or by e-mail.

2.2 Package contents

- MVC100 EDGE Camera
- External GSM antenna
- AC/DC Power adapter (Euro or UK)
- USB cable
- Angled wall mount bracket
- Leaflet "Quick Start Guide"

Note: The manufacturer does not supply the SIM card, which is mandatory for setting up a connection to the GSM network! The SIM card may be purchased from your GSM (mobile) service provider!

Note: If any of the components is missing or damaged, please contact the retailer or reseller from which this product was purchased.

2.3 Installing the hardware

Before installing the hardware, check to make sure that all items listed in the package contents are in.

2.3.1 Inserting SIM card

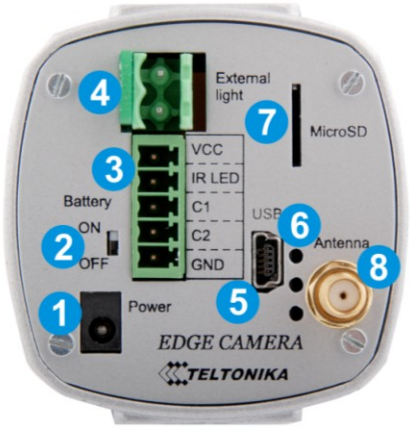
Open and remove the back panel of the camera. To do that, use the screw-driver to loosen four screws holding panel.. After the back panel is removed gently insert the SIM card as showed in figures below.

2.3.2 Attaching antenna

Screw the antenna in a clockwise direction.

Position the antenna upwards at its connecting joint. This will ensure optimal reception.

2.3.3 Back panel overview



1. Power supply adapter socket.
2. Battery
3. 5-pin terminal block
4. 5-pin terminal block for connecting external light
5. USB socket
6. LEDs (Not installed)
7. MicroSD card socket (Not installed)
8. GSM antenna connector

Figure 1. EDGE camera back panel view.

2.3.4 Typical PIR and door sensor connection

Door and PIR sensors may be attached to 5-pin terminal block located in back panel of the camera. Typical PIR and magnetic door sensor connection are given in Fig. 2 and Fig 3.

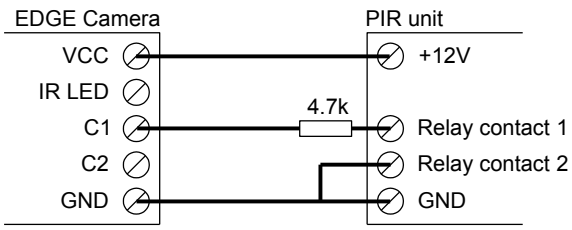


Figure 2. Typical PIR sensor connection to the camera.

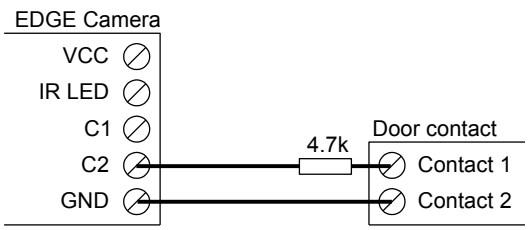


Figure 3. Typical magnetic door sensor connection to the camera.

2.3.5 Wall mounting

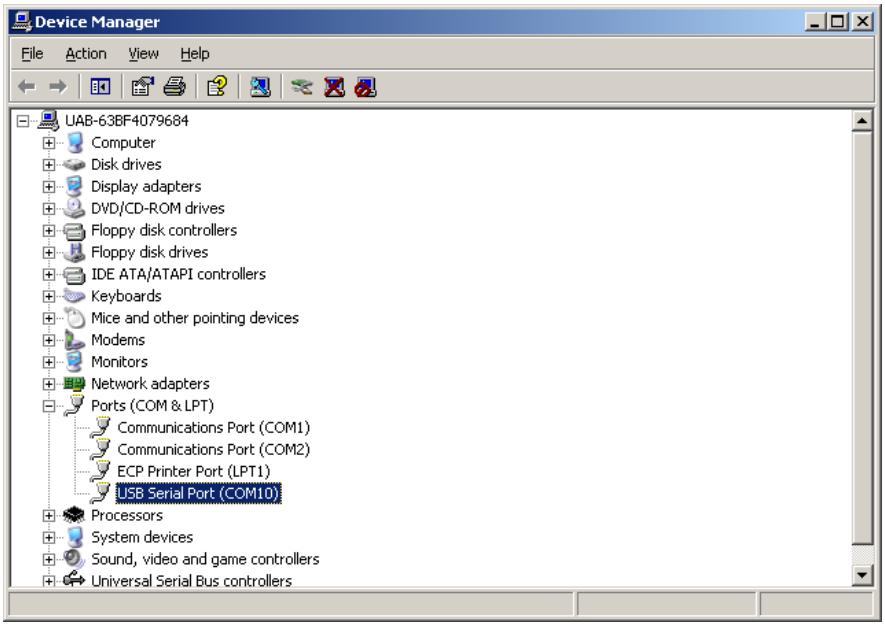
The camera is packed with attachable wall mounting bracket. Wall mounting bracket through the hole on the bracket pad may be attached to the wall.

2.4 Installing the software

Depending on your operating system, follow the instructions below to install software for connecting to the GSM Camera. Installation Guide CD is shipped with the product or available to download from the Teltonika Web site.

2.4.1 Installing USB drivers (Windows)

1. Connect camera to the USB port.
2. Install FTDI drivers.
3. Open System in Control Panel: Start **=> Settings => Control Panel => System**.
4. In the **Hardware** tab select **Device Manager**.
5. Expand "Ports (COM & LPT), to find USB Serial Port COM number. This number will be used during the following installation.



Note: Detailed information on driver installation for Windows XP can be found at www.ftdichip.com as application note: "FTDI Drivers Installation guide for Windows XP" (AN_104).

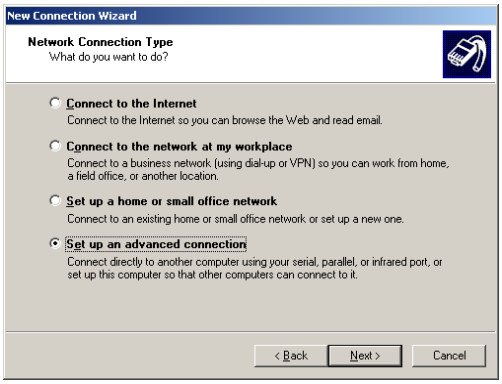
2.4.2 PPP connection settings (Windows)

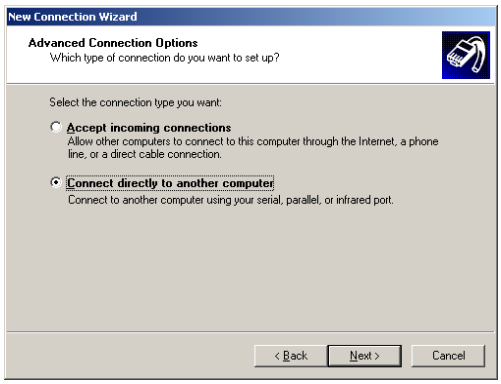
1. Connect camera to the PC USB port.
2. Create a new network connection. To create null modem connection click on:

   Start => Settings => Control Panel => Network connections
3. Then choose **File => New connection**. The **New Connection Wizard** will appear.
4. Click **Next**.

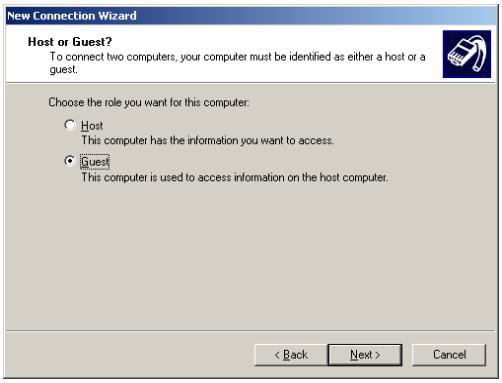
New Connection Wizard
Welcome to the New Connection Wizard
This wizard helps you:
• Connect to the Internet.
• Connect to a private network, such as your workplace network.
• Set up a home or small office network.
To continue, click Next.
< Back
Next >
Cancel

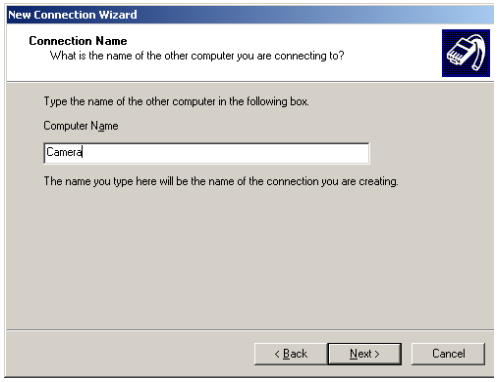
5. Select **Set up an advanced connection** click **Next**. Select **Connect directly to another computer** and then click **Next**.


New Connection Wizard
Network Connection Type
What do you want to do?
Connect to the Internet
Connect to the Internet so you can browse the Web and read email.
Connect to the network at my workplace
Connect to a business network (using dial-up or VPN) so you can work from home, a field office, or another location.
Set up a home or small office network
Connect to an existing home or small office network or set up a new one.
Set up an advanced connection
Connect directly to another computer using your serial, parallel, or infrared port, or set up this computer so that other computers can connect to it.
< Back
Next >
Cancel

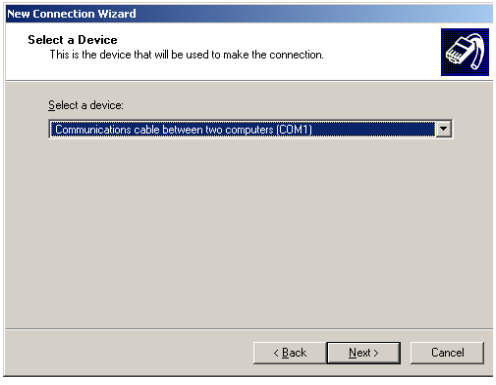

New Connection Wizard
Advanced Connection Options
Which type of connection do you want to set up?
Select the connection type you want:
Accept incoming connections
Allow other computers to connect to this computer through the Internet, a phone line, or a direct cable connection.
Connect directly to another computer
Connect to another computer using your serial, parallel, or infrared port.
< Back
Next >
Cancel

6. Select **Guest** and click **Next**. Enter the connection name.

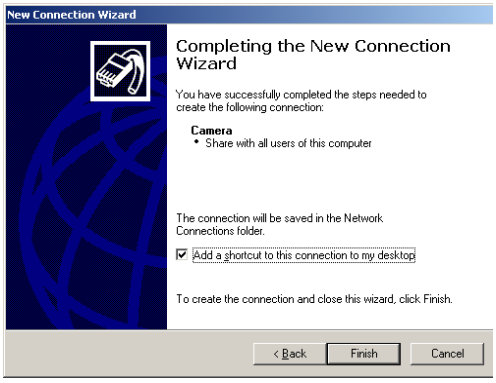

New Connection Wizard
Host or Guest?
To connect two computers, your computer must be identified as either a host or a guest.
Choose the role you want for this computer:
Host
This computer has the information you want to access.
Guest
This computer is used to access information on the host computer.
< Back
Next >
Cancel


New Connection Wizard
Connection Name
What is the name of the other computer you are connecting to?
Type the name of the other computer in the following box.
Computer Name
Camera
The name you type here will be the name of the connection you are creating.
< Back
Next >
Cancel

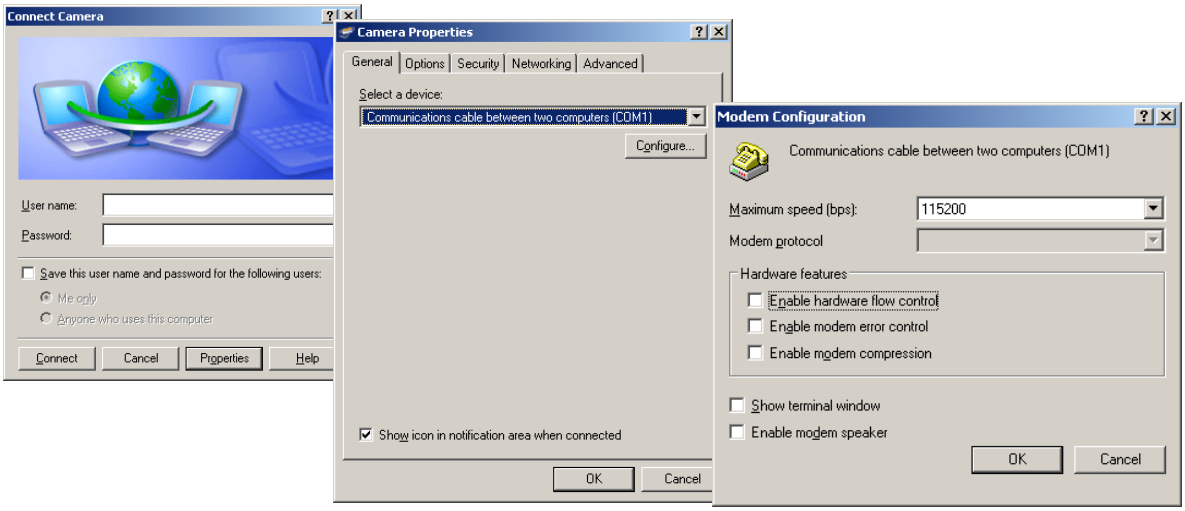
7. Select COM port which was created by camera.


New Connection Wizard
Select a Device
This is the device that will be used to make the connection.
Select a device:
Communications cable between two computers (COM1)
< Back
Next >
Cancel

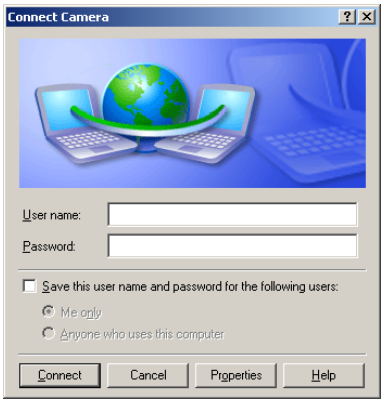
8. You may select **Add a shortcut to this connection to my desktop** for easy access.


New Connection Wizard
Completing the New Connection Wizard
You have successfully completed the steps needed to create the following connection:
Camera
• Share with all users of this computer
The connection will be saved in the Network Connections folder.
Add a shortcut to this connection to my desktop
To create the connection and close this wizard, click Finish.
< Back
Finish
Cancel

9. Select **Properties** to customize connection.
10. In **General** tab press **Configure**. In the new appeared **Modem configuration** window define **Maximum speed (bps)** to **115200 bps**. Then uncheck **Enable hardware flow control** option. Click **OK** to close modem configuration properties.



11. In **Networking** tab scroll down to **Internet Protocol (TCP/IP)** and press **Properties**. Press **Advanced** and uncheck **Use default gateway on remote network**. Click **OK** on all opened configuration windows.
12. Connection is now configured and ready to run. Press **Connect**. After the connection has been established, the network icon appears in the system tray. The icon indicates link speed and activity.



13. Start your Internet browser (e.g. IE or Mozilla). Enter the address IP address of camera (Default : http://10.0.0.1) Enter the login username and password The default administrator login settings are:

    Login: **admin**

    Password: **admin**

2.5 Accessing the Camera

2.5.1 Accessing WEB interface

To access camera WEB interface firstly a PPP connection must be started. How to configure a PPP connection it is written in section 2.4.2. After successful connection open the Web browser and type the camera IP address (http://10.0.0.1). If the camera port was changed from default port 80 to another value the IP address must be written in from http://10.0.0.1:1010 (Value 1010 is new port).

If the IP address and port are correct the login page asking for username and password appears:

The default administrator login settings are:

Login: **admin**
Password: **admin**

2.5.2 WEB configuration page interface structure

The welcome page of the Web management page after successful login to the camera (Fig. 4) is displayed. From this menu all essential configuration pages are accessed.

Figure 4. Welcome page of the camera WEB interface

Status & Review

Live view – real time camera view

Video and image settings

Video parameters – adjust contrast and brightness

Event configuration

Stream & Events – configure constant video and video on event

Settings

E-mail & FTP – configure E-mail and FTP settings

Network – configure mobile network and DDNS settings

Admin

Logs – displays system logs

User's management – change user's password

Maintenance – set the time or update the firmware

3 EDGE CAMERA CONFIGURATION

3.1 Status & Review

3.1.1 Live view

The live view section allows seeing video in real time within the camera WEB interface. Also it contains important status information. The status information view is shown in Fig. 5.

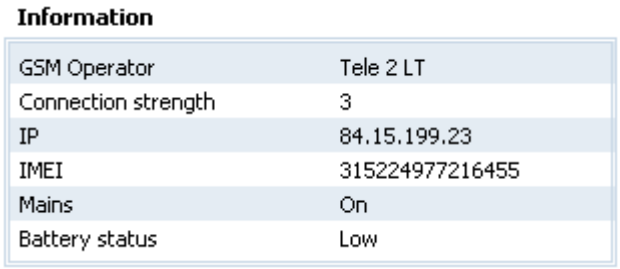


Figure 5. Status information

GSM operator – Displays the GSM operator Logo to which camera is connected.
Connection strength – Displays received signal connection strength.
IP – Camera IP number.
IMEI – Camera IMEI number.
Mains – Shows mains power supply status.
Battery status – Shows battery energy status.

Live View settings allow to set the desired resolution, quality and format (refer to Fig. 6).

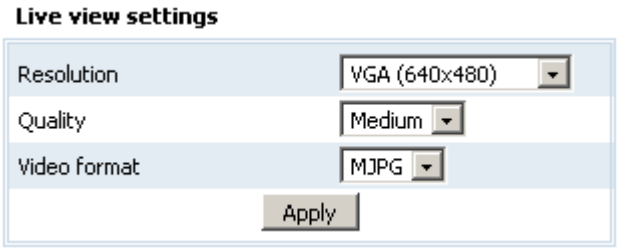


Figure 6. Live view settings

Resolution – Select the desired resolution of live view [VGA/QVGA/QQVGA].
Quality – Select display video quality. [Basic/Medium/Normal/High/Best].
Video format – Displays allowable video format [JPEG].

Live view session time is set in the Live view time out section. When the time expires camera stops displaying live view. Live view can be started again by pressing Reset button.

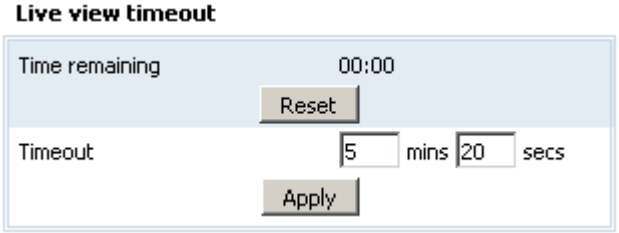


Figure 7. Live view timeout settings

Time remaining – Displays remaining time before camera stops displaying live view.

Timeout – Define the time out in minutes and seconds.

3.2 Video and image settings

3.2.1 Video parameters

Video parameter may be used to get clear video. In Fig. 8 shows video configurations settings.

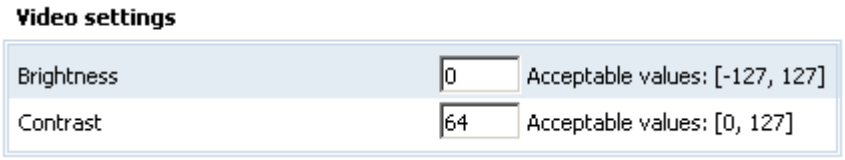


Figure 8. Video settings configuration.

Brightness – Adjust the brightness value from range -127 to 127.

Contrast – Adjust the contrast value from range 0 to 127.

3.3 Event configuration

3.3.1 Stream & Events

This section describes how to configure the camera to send stream and streams on events.

3.3.1.1 Constant stream

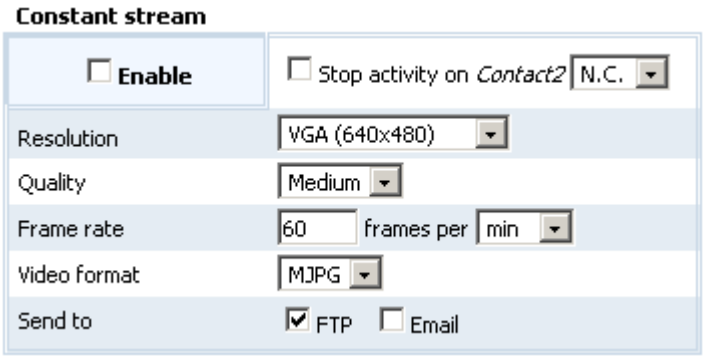


Figure 9. Constant video stream settings.

Enable – Check the box to enable constant stream.

Stop activity on Contact2 – Check the box if there is a need to stop streaming on event on Contact2 [N.C. – Normally Closed, N.O. – Normally Open].

Resolution – Select the desired resolution of live view [VGA/QVGA/QQVGA].

Quality – Select display video quality. [Basic/Medium/Normal/High/Best].

Frame rate – Set frame rate for video stream.

Video format – Displays allowable video format [JPEG].

Send to – Select video stream send destination.

3.3.1.2 On event stream

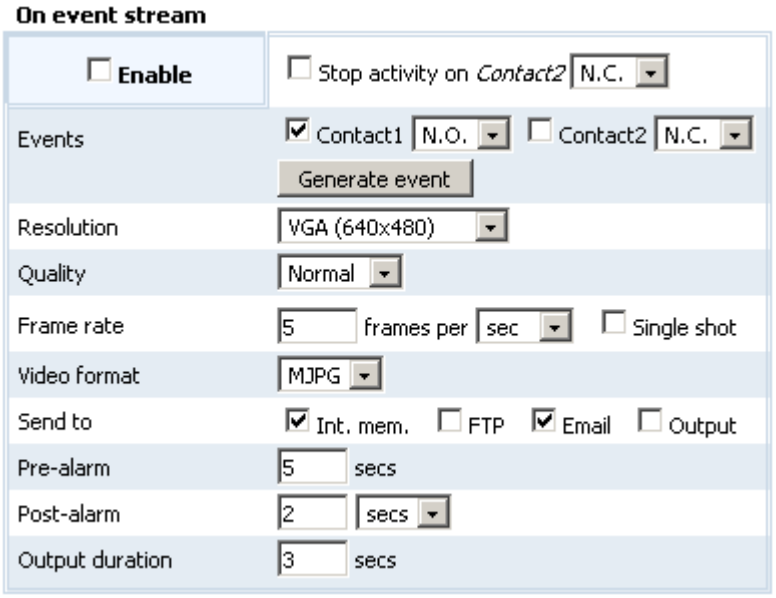


Figure 10. Event video stream settings.

Enable – Check the box to enable constant stream.

Stop activity on Contact2 – Check the box if there is a need to stop streaming on event on Contact2 [N.C. – Normally Closed, N.O. – Normally Open].

Events – Select desired events which trigger the on event stream. Event trigger maybe be: Contact1, Contact2 which are located on the back panel of the camera and Motion detection. Before using motion detection feature it must be configured.

Resolution – Select the desired resolution of live view [VGA/QVGA/QQVGA].

Quality – Select display video quality [Basic/Medium/Normal/High/Best].

Frame rate – Set frame rate for video stream.

Video format – Displays allowable video format [JPEG].

Send to – Select video stream send destination. To send video to E-mail or FTP their settings first must configured.

Pre-alarm – The camera has ability to send stream which was before the event. It is made by continuously storing required amount of information in camera's internal memory. Set the time in seconds to define how much data must be stored.

Post-alarm – Set the time in seconds how long after the event camera sends the stream.

Output duration – Camera has integrated relay switch, which may be turned on event. This feature may be used for turning on exterior lighting. Set the time to define output turn on duration.

3.4 Settings

3.4.1 E-mail & FTP

This section describes how to configure FTP and E-mail settings.

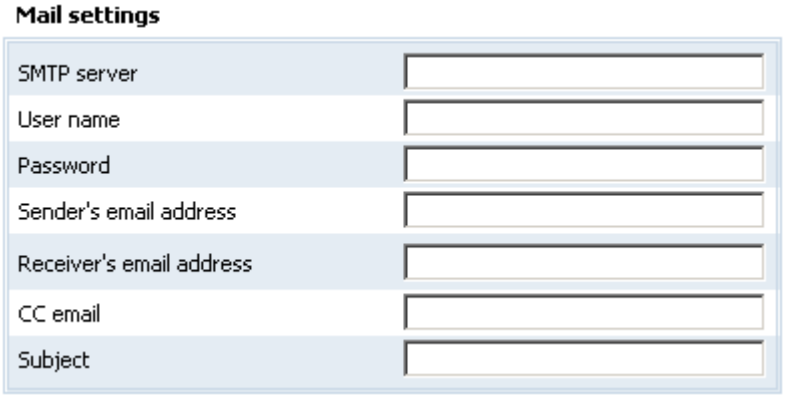


Figure 11. E-Mail settings.

SMTP server – the domain or the IP address of the email SMTP server.

User name –Enter your user name of the email account.

Password – Enter your password of the email account.

Sender's email address – Enter emails address which is assigned to the username and password.

Receiver's email address – Enter email address of the recipient to which the video or single images will be sent.

CC email – Enter secondary recipients email address which will be added to sent email as Carbon Copy (CC).

Subject – Enter the desired subject of the email.

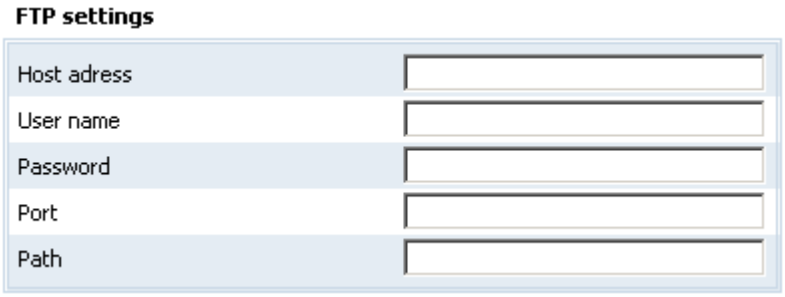


Figure 12. FTP settings.

Host address – the domain or the IP address of the FTP server.

User name –Enter your user name of the FTP account.

Password – Enter your password of the FTP account.

Port – Set the port of the FTP server. The default FTP port is 21.

Path – Set the folder path to with the data will be transferred.

3.4.2 Network

3.4.2.1 GSM network settings

GSM network settings are used to configure connection to GSM network settings. Al the configuration data must be provided by your mobile service provider.

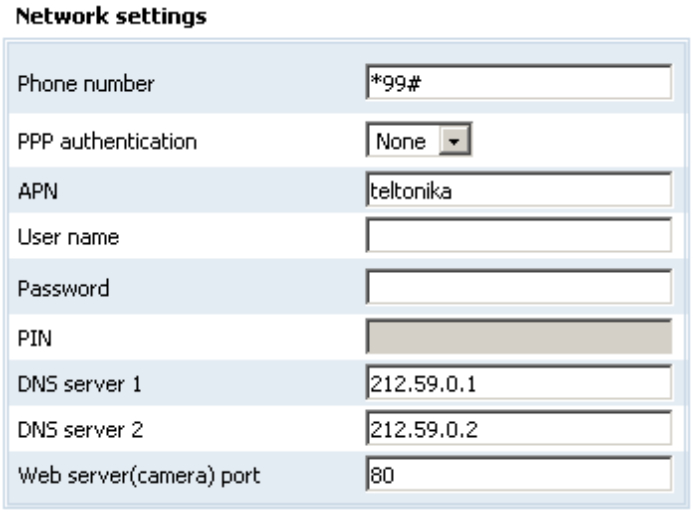


Figure 13. Mobile network configuration.

Phone Number – Phone number acquired from your ISP (default *99#).

PPP authentication – select authentication protocol, which is used by your Internet Service Provider [None/CHAP/PAP].

APN – Access Point Name (APN).

User Name – Enter your User Name for your mobile connection.

Password – Enter your Password for your mobile connection.

PIN – SIM card pin number.

DNS server 1 and **DNS server 2** are ISP domain servers.

Web server (camera) port – Define port for connecting to camera web interface.

3.4.2.2 Dynamic DNS Settings

Dynamic DNS (DDNS) is a domain name service allowing to link dynamic IP addresses to static hostname. To start using this feature firstly you should register to DDNS server. On the WEB it is possible to find many free and paid DDNS service providers.

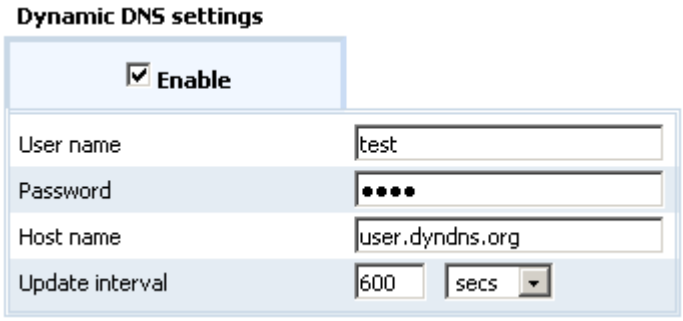


Figure 14. Dynamic DNS Settings.

Enable– check the box to enable DDNS.

User name - enter your user name. The router will use it to automatically login to update your IP address in the DDNS server.

Password – enter you login password.

Hostname - enter your hostname which was registered in DDSN server.

Update interval – enter IP address update time in selected time periods.

3.5 Admin

3.5.1 Logs

In the logs sections all events maybe reviewed. The logs maintain information about the system status and I/O logs events.

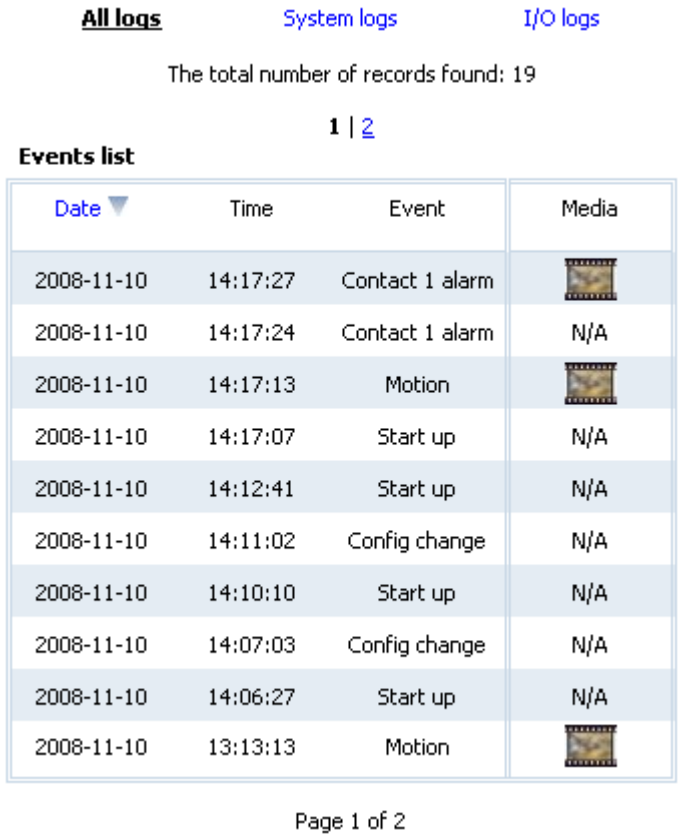


Figure 15. Log window view.

3.5.2 Users management

In this section camera user's username and password can be changed. To change the password click on the user the new window with username and password will appear (Fig. 16)

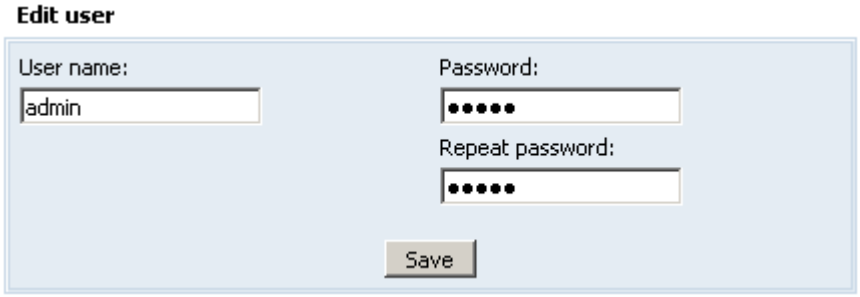


Figure 16. Username and password change window.

Username – set the new username.

Password – enter new password.

Repeat password – re-enter the new password to verify its accuracy.

3.5.3 Maintenance

3.5.3.1 Set the time

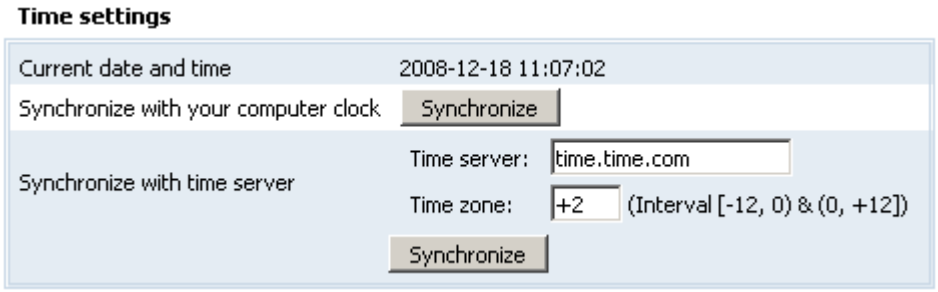


Figure 17. Username and password change window.

3.5.3.2 Firmware upgrade

To update your device firmware click on the **Update firmware** button.

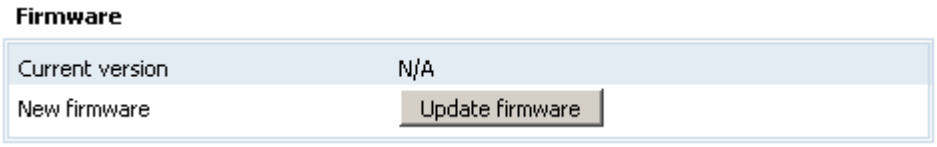


Figure18. Firmware update

3.5.3.3 Restoring default username and password or resetting to factory defaults

1. Connect the AC/DC power adapter to the camera.
2. Connect camera to the USB port.
3. Connect camera to the PC USB.
4. Establish PPP connection.
5. In the WEB browser, type the IP address http://10.0.0.1:6541
6. Follow the instruction to restore default username and password or restoring camera to factory defaults.

4 TECHNICAL SPECIFICATION

Management

User-friendly Web GUI

IMAGE

Image sensor: VGA (640x480 pixels).
Image resolution: VGA/QVGA/QQVGA
Image compression: JPEG
Video clip (programmable time duration) and/or single snapshot

SECURITY

Security for administration/configuration: only authorised users are allowed (user name and password)

CONFIGURATION & CONTROL

Interfaces:

- Built-in web-server
- USB

Firmware update:

- Built-in web-server
- USB

IMAGE TRANSMISSION

Image transmission over GPRS/EDGE network to:

- FTP-server
- E-mail server
- PC or PDA over WEB

TRANSMISSION CONTROL

Transmitting and/or saving images on sensor activity (for example: PIR sensor, door contact...)
Pre-alarm function (ability to transmit/record video before sensor activity)
Possibility to stop transfer/record activity on external contact

EDGE 850/900/1800/1900 MHz

GSM Power Class 4 (2W) for 850/900 bands.

GSM Power Class 1 (1W) for 1800/1900 bands.

EDGE class E2 (+27 dBm in 850/900 bands, +26 dBm in 1800/1900 bands).

GPRS/EGPRS Multislot Class 12 (4 slots Rx, 4 slots Tx).

GPRS/EGPRS Class B Type 1 MT.

GPRS CS1-CS4; EGPRS MCS1-MCS9.

CSD: 14.4 and 9.6 kbps.

POWER SUPPLY

Mains adaptor: 11.5V to 15V DC
Power consumption: 2W

TEMPERATURES & HUMIDITY

Operating temperature: 0ºC to 50ºC.
Relative humidity: maximal 80%
Store and transport conditions:
Temperature: -20° to 60° C.
Relative humidity 5% to 95%

OTHER

Lighting control: relay contacts
Backup battery
Power source detection:
Mains indication
Low battery power detection
GSM operator's identification
GSM signal level measurement and display

ELECTRICAL CHARACTERISTICS

Nominal power supply voltage	**12V**
Current Consumption when idle	⎓ 100 **mA**
Current Consumption when operating	⎓ 250 **mA**

5 Appendix D Dynamic Domain Name Service (DDNS)

Domain Name Service (DNS) - What is DNS?

The Internet system that translates human-understandable hostnames (like www.teltonika.eu) into computer-understandable IP addresses (like 213.226.139.54) and back again.

Dynamic Domain Name Service (DNS) - What is DDNS?

Dynamic DNS (DDNS) is a domain name service allowing to link dynamic IP addresses to static hostname.

Create DDNS service account

Before using DDNS you must create the DynDNS service account. There are many companies where you can create account. Some of them are free, like www.dyndns.org, and some are payable. After you will create account you will get:

Hostname
Username
Password

Configure cam DDNS settings

Connect to router WEB configuration page. Then go **Configuration => Dynamic DNS settings**. You should see settings table as below.

Enable Dynamic DNS – check the box to enable DDNS.
User name - enter your user name. The router will use it to automatically login to update your IP address in the DDNS server.
Password – enter you login password.
Hostname - enter your hostname which was registered in DDSN server (eg. hostname.dyndns.org).
Update period – enter IP address update time in seconds.